

Work Order ID 91368

October-05-12 8:02:07 AM

91368

Rev A Dwg. 8/3/04/23
PRELIMINARY ISSUE

Page 1

Item ID: D4653-7

Accept

N900040100

Setup Start *NS1*

Revision ID: PRELIM

Item Name: Fitting. Large

Stop *NS2*

Start Date: 05/10/2012 Start Qty: 6.00

Required Date: 19/10/2012 Req'd Qty: 6.00

Reference:

Cust Item ID:

Customer:

Approvals:

Process Plan: M.5

Date: 12-10-04

Tooling:

Date:

Run Start *NR1*

QC:

Date:

SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D4653	<u>pa6</u> <u>A</u>					12			
100		0.00							
100	Hardinge CNC LATHE SMALL								
Doosan		0.00							
Doosan Lathe	Memo Machine as per folio FB/17 FOLIO REV: <u>N/A</u> DWG REV: <u>PA6</u>								
	Deburr								
110		0.00				12			
110	QC2- Inspect parts off machine FAI/FAIB								
QC		0.00							
Quality Control	Memo								

DAS
13
89

12/10/9

DAS
13
89

12/10/9

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data <input type="checkbox"/>									
Equip/Tooling <input type="checkbox"/>									
Operator <input type="checkbox"/>									
Material <input type="checkbox"/>									
Setup <input type="checkbox"/>									
Other <input type="checkbox"/>									
Process <input type="checkbox"/>									
Supplier <input type="checkbox"/>									
Training <input type="checkbox"/>									
Unapproved <input type="checkbox"/>									

FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio	<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other
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Work Order ID 91368

91368

Page 2

October-05-12 8:02:07 AM

Item ID: D4653-7
Revision ID: PRELIM
Item Name: Fitting, Large

Accept

N900040100

Setup Start *NS1*

Stop *NS2*

Start Date: 05/10/2012 Start Qty: 6.00
Required Date: 19/10/2012 Req'd Qty: 6.00

6
6

Cust Item ID:
Customer:

Reference:

Approvals: Process Plan: Date: Tooling: Date:
QC: Date: SPC (Y/N): Date:

Run Start *NR1*

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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120 QC8- Inspect parts - second check

0.00

120

QC

Memo

0.00

Quality Control

130 Identify as per dwg & Stock Location:

0.00

130

Packaging

Memo

0.00

Packaging

memo on 91367

140 QC21- Final Inspection - Work Order Release

0.00

140

QC

Memo

0.00

Quality Control

POSITIVE RECALL

EFFECTIVE 12-10-04 AUTH

RELEASED 6 DATE 13/04/23

to New Day

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____				DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		AGAINST DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> </div> <div> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/> </div> </div>					
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector		
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Unapproved <input type="checkbox"/>											

FAULT CATEGORY			
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Picklist Print

October-05-12 8:02:11 AM

Page 1

Work Order ID: 91368

91368

Parent Item: D4653-7

D4653-7

Parent Item Name: Fitting, Large

Start Date: 05/10/2012

Required Date: 19/10/2012

Start Qty: 6.00

Required Qty: 6.00

Comments: IPP REV:A NEW ISSUE 12-06-11 JLM VERIFIED BY:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
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M6061T6R1.000 Purchased No

f 64.6230

0.1248

M6061T6R1 000

**

ROUND BAR 1.00"

SA 12/10/10

Location

Loc Qty

Loc Code

013

4.82

121192

4.82

MAT008

24

121070

24

MAT013

35.803

116406

13.103

118271

5.7

122521

17

1.200

1.821

471.4

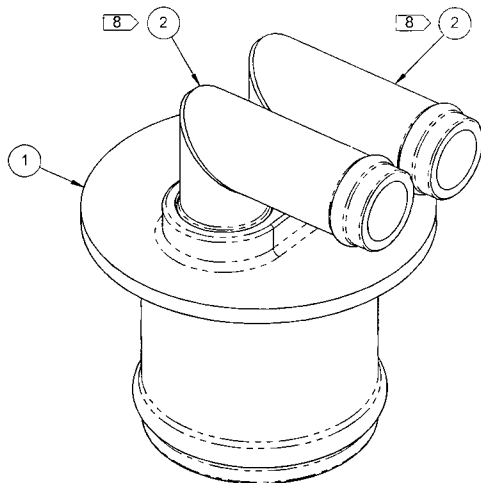
NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

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QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____				DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		AGAINST DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> </div> <div> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/> </div> </div>					
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D4653-041 VENT MANIFOLD ASSEMBLY

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 0.35 lbs
- 8) APPLY A LAYER OF ASSEMBLY FLUID #1 OR EQUIVALENT IN O-RING PRIOR ASSEMBLY D4653-045

ITEM	QTY	P/N	DESCRIPTION
	X	D4653-041	VENT MANIFOLD ASSEMBLY
1	1	D4653-3	COLLAR
2	2	D4653-045	FITTING ASSEMBLY
3	A/R	LUBRICANT	ASSEMBLY FLUID #1

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE

WORK ORDER
NO. 91368 *MLT*
12-10-04

PRELIMINARY ISSUE

12.09.24

PA6	COMBINED D4653-1/-5 INTO D4653-3 AS A SINGLE PART: D4653-043/-1/-5 REMOVED; RE-DESIGNED D4653-3/-9: D4654-3 O-RING WAS D4654-1; TOLERANCE CHANGE.	MB	12.09.24
REV.	DESCRIPTION	BY	DATE
DESIGN	<i>[Signature]</i>		
DRAWN	<i>[Signature]</i>		
CHECKED	<i>[Signature]</i>		
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	12.09.24		

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

DRAWING NO. **D4653** REV. PA6
SHEET 1 OF 6

TITLE **VENT MANIFOLD ASSY** SCALE **NTS**

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NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT
WRITTEN PERMISSION FROM DART AEROSPACE LTD.

Receiving Report

Date: 10/12/13

Batch No: m116404

Supplier: Phymark Corp

Dart P/O: 13093

Packing Slip: Yes ☒ No ☐
 Invoice: Yes ☐ No ☒
 Receipt: Cash ☐ Cr ☐

Release Note Attached: Yes ☒ No ☐ N/A ☐
 Waybill Attached: Yes ☒ No ☐
 Shipment Complete: 8 Yes ☒ No ☐ N/A ☐
 QC6 Inspection 8 N/A ☐
 Work Order 10124 N/A ☐

Discrepancies

Part Number	Description	Quantity Ordered	Quantity Received	Quantity Returned	Quantity Short	Comments

Initials of receiver (if shipment OK) Level 12 CZ

Production/Admin:

Date 10/12/14

Location _____

Received/Costing CZ

Initial _____

Page 1 of 1

All amounts are calculated in domestic currency.

Purchase Order ID/ Curr Type	Line Nbr/ Insp Req	Project ID	Reference/ Description/ Cert Std	PO U/M / Stock U/M	Required Date Required Qty	Recv Date/ Recv Emp	Recv Qty (PO U/M)	Cost Per Unit/ Recv Value	Inspected Qty/ Rejected Qty (PO U/M)	MRB Qty/ MRB Reject Qty	Book Amt
VendorID\Vendor Name		VC-COP001	Thyssenkrupp Materials CA Ltd								
PO13093	1		M6061T6B00750X00 f .125		12/13/10	12/14/10	80.0000	\$0.25	0.0000	0	\$19.80
CAD	No		6061-T6 Bar .750 x f .125 116406		80.0000	LAVO01		\$19.80	0.0000	0	
	2		M6061T6B1.000X12. f 000		12/13/10	12/14/10	12.0000	\$31.17	0.0000	0	\$374.00
	No		6061-T6 Bar 1.00 x f 12.00 116406		12.0000	LAVO01		\$374.00	0.0000	0	
	3		M6061T6B1.500X01. f 500		12/13/10	12/14/10	12.0000	\$5.87	0.0000	0	\$70.40
	No		6061-T6 Bar 1.50 x f 1.50 116406		12.0000	LAVO01		\$70.40	0.0000	0	
	4		M6061T6R0.750 f		12/13/10	12/14/10	48.0000	\$1.19	0.0000	0	\$57.20
	No		6061-T6 Round Bar f .750" 116406		48.0000	LAVO01		\$57.20	0.0000	0	
	5		M6061T6R1.000 f		12/13/10	12/14/10	24.0000	\$2.11	0.0000	0	\$50.60
	No		ROUND BAR 1.00" f 116406		24.0000	LAVO01		\$50.60	0.0000	0	

Total Received Quantity:	176.0000
Total Qty to Inspect (PO U/M):	0.0000
Total Reject Quantity:	0.0000
Total Receipt Value:	\$572.00
Total Balance Due Quantity:	0.0000

B I L L O F L A D I N G

No: PEC 687483

Ship From:
 THYSSENKRUPP MATERIALS NA
 2821 LANGSTAFF ROAD
 CONCORD, ONTARIO L4K 5C6
 Tel: 905 669 9444 Fax: 9057389033

Ship Date 10Dec10 at 8:32 From PFW
 Probill T151012
 Via APEXMOTOR-PEC
 FOB CONCORD
 Frt PREPAID
 Route 0- 0 Manifest
 Vhcle Trailer
 Slp TRINA VINCE (905-532-1365)
 Sold To: (20115)
 DART AEROSPACE

Ship To: (1)
 DART AEROSPACE

B I L L O F L A D I N G

5) Our Order PEC-282304- 5 Your PO # 13093
 Part # Rel # CHANTAL
 ALUMINUM ROUND BAR 6061-T6511
 1.00" DIA X 144.0000" *cd1011213*

MTR

Heat Number	Tag No	Quantity	PCS	Wt LBS
201012067	145082	24 FT	2	23

TOTAL:	Tags	PCS	LBS
	5	12	260

Heat Number
 10081183a
 11530
 201012067
 201012176

*** Chemical Analysis ***

MILL TEST REPORTS, PACKING SLIPS ARE TO SENT
 WITH MATERIAL AND FAXED TO THE CUSTOMER PRIOR
 TO SHIPPING.

ATTN: CHANTAL/LINDA

** ALL PACKING SLIPS MUST HAVE THE HEAT NUMBER **
 ** REFERENCED ON IT **

TOTAL 2 BDLS G.W. 291 LBS

ITEM (1) BDL
 ITEMS (2,3,4,5) BDL

***** CLOSED FOR THE HOLIDAYS *****
 FROM DEC. 25TH TO 28TH, ON DEC. 31ST & JAN. 3RD.
 WE ARE OPENED FOR BUSINESS ON DEC. 29TH & 30TH.
 HAVE A HAPPY HOLIDAY SEASON!
 *CUSTOMER PICK-UP HRS AT THYSSENKRUPP MATERIALS NA

Page: 2Continued

TOUTES ERREURS ET/OU MARCHANDISES MANQUANTES DOIVENT ÊTRE
 RAPPORTÉES IMMÉDIATEMENT.

ERRORS OR SHORTAGE MUST BE REPORTED IMMEDIATELY

RETOUR DE MARCHANDISES AVEC NOTRE NUMERO D'APPROBATION SEULEMENT.
 MERCHANDISE MAY NOT BE RETURNED WITHOUT OUR APPROVAL NUMBER.

THYSSENKRUPP MATERIALS NA

DART AEROSPACE
ALUMINUM ROUND BAR 6061-T6511
1.00" DIA X 144.0000"
PART NO.

PO/Rel 13093 /CHANTAL

We certify that this is a true copy of the report furnished by the producer of the metal, or data resulting from tests made in approved labs.

Signed by: _____

Certificate of Mill Test Results

BL PEC-687483-005

10Dec10

Pg 1/2



SERVICE CENTER METALS
5850 Quality Way
Prince George, VA 23875

CERTIFIED INSPECTION REPORT AND TEST RESULTS FOR EXTRUDED PRODUCTS

OUR ORDER NUMBER	ITEM
117111	3

BILL TO

ThyssenKrupp Materials NA

SHIP TO

ThyssenKrupp Materials NA PEC

MANIFEST NUMBER

117656

CUSTOMER PO

PEC-225368

CUSTOMER PART NUMBER

RD0005

DIE NUMBER

RD0005

ALLOY / TEMPER

6061-T6511

DESCRIPTION

ROD 1.000 +/- .004

DATE OF SHIPMENT

10/22/2010

SALESPERSON

David Schroeder

CERTIFICATION

ASTM-B221-08 StencilContinuous

SPECIFICATION

AMS-QQA-200/8

Quantity Certified 2,260 lbs 204pcs

We hereby certify that the material covered by this report has been inspected in accordance with the most recent certification revision, and has been found to meet the applicable requirements described herein, including any specifications forming a part of the description, and that samples representative of the material met the composition limits and had the mechanical properties shown. SCM extrusions are manufactured in the USA from ingot melted and cast in the United States or Canada.

Items produced and certified as 6061-T6511 also meet the requirements of 6061-T6

Mechanical Properties

Test No.	Lot No.	Test Date	Ultimate Tensile Strength (KSI)	Yield Strength (KSI)	Percent Elongation
91	201012067	09/26/10	54.0	50.4	19.5
92	201012067	09/26/10	56.5	53.0	18.0
93	201012067	09/26/10	54.0	50.4	19.5
94	201012067	09/26/10	53.2	49.8	19.5
95	201012067	09/26/10	54.4	50.4	17.5
96	201012067	09/26/10	52.8	49.0	16.5
97	201012067	09/26/10	54.2	50.5	19.5
98	201012067	09/26/10	54.4	50.9	18.5
99	201012067	09/26/10	56.3	52.6	16.5
100	201012067	09/26/10	52.6	48.7	15.5
101	201012067	09/26/10	52.4	48.6	18.5
102	201012067	09/26/10	53.7	49.9	18.5
103	201012067	09/26/10	52.5	48.7	16.5
104	201012067	09/26/10	52.8	48.8	17.5
105	201012067	09/26/10	54.0	50.3	19.5

8 10/26/10

Calvin J. Wiggins

Calvin J. Wiggins, Director of Quality & Technical Services

Receiving Report

Date: 12/7/26
 Supplier: THX 586h

Batch No: M12251
 Dart P/O: 17463

Packing Slip: Yes ☒ No ☐
 Invoice: Yes ☐ No ☒
 Receipt: Cash ☐ Cr ☒

Release Note Attached: Yes ☒ No ☐ N/A ☐
 Waybill Attached: Yes ☐ No ☒ N/A ☐
 Shipment Complete: DAS Yes ☐ No ☒ N/A ☐
 QC6 Inspection: 14 12/07/27 N/A ☒
 Work Order: 9-88 N/A ☒

Discrepancies

Part Number	Description	Quantity Ordered	Quantity Received	Quantity Returned	Quantity Short	Comments
M30430-000 X 0000		24	0	0	24	
M2413 0625 X 300		12	0	0	12	
M6061765032		96	0	0	96	
M70751332000 X 3056		0	0	0	0	

Initials of receiver (if shipment OK) Level 12 CC

Production/Admin: 12/1/26
 Date: 12/1/26
 Received/Costing: CC
 Initial: CC

Location _____

Purchase Order Receipt Listing

Thursday, July 26, 2012 8:56:04 AM

All amounts are calculated in domestic currency.

All Vendors PO ID PO17463 Receipt Dates from 7/26/2012 to 7/26/2012 All Line Item Types
All Item ID/GL/WOs All Rec. Employees All Currencies
Grouped by Vendor ID

Purchase Order ID/ Curr Type	Line Nbr/ Insp Req	Project ID	Reference/ Description/ Cert Std	PO U/M / Stock U/M	Required Date Required Qty	Recv Date/ Recv Emp	Recv Qty (PO U/M)	Cost Per Unit/ Recv Value	Inspected Qty/ Rejected Qty (PO U/M)	MRB Qty/ MRB Reject Qty	Book Amt
VendorID/Vendor Name		VC-COP001	Thyssenkrupp Materials CA Ltd								
PO17463	3		M303B1.000X1.000 f		7/25/2012	7/26/2012	12.0000	\$13.49	0.0000	0	\$171.36
CAD	No		303 BAR 1" X 1" f		12.0000	DESJ02		\$171.36	0.0000	0	
			122521								
	6		M304S11GA sf		7/23/2012	7/26/2012	280.0000	\$8.85	0.0000	0	\$2,478.17
	No		304/316 0.125 Sheet sf		280.0000	DESJ02		\$2,478.17	0.0000	0	
			122521								
	7		M6061T6B0.500X01. f		7/23/2012	7/26/2012	24.0000	\$1.55	0.0000	0	\$37.09
	No		250		24.0000	DESJ02		\$37.09	0.0000	0	
			6061-T6 Bar .500 x f								
			1.25								
			122521								
	8		M6061T6B0.500X06. f		7/23/2012	7/26/2012	24.0000	\$7.03	0.0000	0	\$168.78
	No		000		24.0000	DESJ02		\$168.78	0.0000	0	
			6061-T6 Bar .500 x f								
			6.00								
			122521								
	9		M6061T6B0.750X01. f		7/23/2012	7/26/2012	24.0000	\$2.62	0.0000	0	\$62.80
	No		500		24.0000	DESJ02		\$62.80	0.0000	0	
			6061-T6 Bar .750 X f								
			1.50								
			122521								
	10		M6061T6B1.000X04. f		7/23/2012	7/26/2012	24.0000	\$9.24	0.0000	0	\$221.77
	No		000		24.0000	DESJ02		\$221.77	0.0000	0	
			6061-T6 Bar 1.00 x f								
			4.00								
			122521								
	11		M6061T6B1.250X01. f		7/23/2012	7/26/2012	12.0000	\$3.60	0.0000	0	\$43.18
	No		250		12.0000	DESJ02		\$43.18	0.0000	0	
			6061-T6 Bar 1.25 x f								
			1.25								
			122521								

Purchase Order ID/ Curr Type	Line Nbr/ Insp Req	Project ID	Reference/ Description/ Cert Std	PO U/M / Stock U/M	Required Date Required Qty	Recv Date/ Recv Emp	Recv Qty (PO U/M)	Cost Per Unit/ Recv Value	Inspected Qty Rejected Qty (PO U/M)	MRB Qty/ MRB Reject Qty	Book Amt
VendorID/Vendor Name VC-COP001 Thyssenkrupp Materials CA Ltd											
PO17463	12		M6061T6B1.500X02. f 000		7/23/2012	7/26/2012	12.0000	\$6.87	0.0000	0	\$82.43
CAD	No		6061-T6 Bar 1.50 x f 2.00 122521		12.0000	DESJ02		\$82.43	0.0000	0	
	13		M6061T6B2.000X02. f 250		7/23/2012	7/26/2012	12.0000	\$11.61	0.0000	0	\$139.34
	No		6061-T6 Bar 2.00 x f 2.25 122521		12.0000	DESJ02		\$139.34	0.0000	0	
	14		M6061T6R1.000 f		7/23/2012	7/26/2012	24.0000	\$1.80	0.0000	0	\$43.18
	No		ROUND BAR 1.00" f 122521		24.0000	DESJ02		\$43.18	0.0000	0	
	15		M6061T6R3.500 f		7/23/2012	7/26/2012	12.0000	\$23.06	0.0000	0	\$276.73
	No		6061 RD bar 3.50 f 122521		12.0000	DESJ02		\$276.73	0.0000	0	
	17		M6061T6S.080 sf		7/23/2012	7/26/2012	96.0000	\$3.05	0.0000	0	\$292.43
	No		6061-T6 .080 Sheet sf 122521		96.0000	DESJ02		\$292.43	0.0000	0	
	18		M6061T6S.125 sf		7/23/2012	7/26/2012	64.0000	\$4.75	0.0000	0	\$304.20
	No		6061-T6 .125 Sheet sf 122521		64.0000	DESJ02		\$304.20	0.0000	0	
Total Received Quantity:											620.7000
Total Qty to Inspect (PO U/M):											0.0000
Total Reject Quantity:											0.0000
Total Receipt Value:											\$4,321.47
Total Balance Due Quantity:											0.0000

B I L L O F L A D I N G
Ship From: THYSSENKRUPP MATERIALS NA
2821 LANGSTAFF ROAD
CONCORD, ONTARIO L4K 5C6
Tel: 905 669 9444 Fax: 9057389033

No: PEC 777693
Ship Date 23Jul12 at 10:57 From PFW
Probill
Via VIM TRANSFER
FOB CONCORD
Frnt PREPAID
Route 0- 0 Manifest
Vhcle Trailer
Slp STAN IVERS (905-532-1350)
Sold To: (20115)
DART AEROSPACE

Ship To: (1)
DART AEROSPACE

B I L L O F L A D I N G

6) Our Order PEC-472083- 6 Your PO # 17463

ALUMINUM FLAT BAR 6061-T6511

1.00" x 4.00" X 144.0000"

Heat Number
201210303

Tag No
88405

Quantity PCS MTR Wt LBS
24 FT 2 114

7) Our Order PEC-472083- 7 Your PO # 17463

ALUMINUM SQUARE BAR 6061-T6511

1.250" X 144.0000"

Heat Number
Z00240017

Tag No
88406

Quantity PCS MTR Wt LBS
12 FT 1 23

8) Our Order PEC-472083- 8 Your PO # 17463

ALUMINUM FLAT BAR 6061-T6511

1.50" x 2.00" X 144.0000"

Heat Number
201209117

Tag No
88407

Quantity PCS MTR Wt LBS
12 FT 1 43

9) Our Order PEC-472083- 9 Your PO # 17463

Part # OFFERING***** Rel #

ALUMINUM FLAT BAR 6061-T6511

2.00" x 2.50" X 144.0000"

Heat Number
C7331164

Tag No
88408

Quantity PCS MTR Wt LBS
12 FT 1 71

10) Our Order PEC-472083- 10 Your PO # 17463

ALUMINUM ROUND BAR 6061-T6511

1.00" DIA X 144.0000"

Heat Number
Z00216020

Tag No
88409

Quantity PCS MTR Wt LBS
24 FT 2 23

11) Our Order PEC-472083- 11 Your PO # 17463

ALUMINUM ROUND BAR 6061-T6511

3.50" DIA X 144.0000"

MTR

Page: 2Continued

TOUTES ERREURS ET/OU MARCHANDISES MANQUANTES DOIVENT ÊTRE
RAPPORTÉES IMMÉDIATEMENT
ERRORS OR SHORTAGE MUST BE REPORTED IMMEDIATELY
RETOUR DE MARCHANDISES AVEC NOTRE NUMÉRO D'APPROBATION SEULEMENT
MERCHANDISE MAY NOT BE RETURNED WITHOUT OUR APPROVAL NUMBER

REÇU EN BONNE CONDITIONS / RECEIVED IN GOOD CONDITION

DATE

25 JUL. 2012

THYSSENKRUPP MATERIALS NA

DART AEROSPACE

ALUMINUM ROUND BAR 6061-T6511
1.00" DIA X 144.0000"
PART NO.

PO/Rel 17463

We certify that this is a true copy of the report
furnished by the producer of the metal, or data
resulting from tests made in approved labs.

Certificate of Mill Test Results

BL PEC-777693-010

23Jul12

Pg 1/2

Signed by: _____

KAISER
ALUMINUM
FABRICATED PRODUCTS

KAISER ALUMINUM
FABRICATED PRODUCTS, LLC
5205 KAISER DRIVE
KALAMAZOO, MI 49048

CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

CUSTOMER PO NUMBER: PEC-239097-5		CUSTOMER PART NUMBER: 015246-2		PRODUCT DESCRIPTION: KAISERSELECT PRECISION ROD 1.000+/-0.004	
KAISER ORDER NUMBER: 620138	LINE ITEM: 005	SHIP DATE: 05/11/2012	KAISER LOT NUMBER: Z00216020	ALLOY: 6061	TEMPER: T6511B
WEIGHT SHIPPED: 2922.000 LB	QUANTITY: 264.000 PCS	B/L NUMBER: 603400	DIAM/DAF/THKNS: 	WIDTH: 	LENGTH: 12.000 FT
SHIP TO: THYSSENKRUPP MATERIALS NA 2821 LANGSTAFF ROAD CONCORD, ON L4K 5C6 CANADA			SOLD TO: THYSSENKRUPP MATERIALS NA 2821 LANGSTAFF ROAD CONCORD, ON L4K 5C6 CANADA		

Actual Physical Properties

REFERENCE	DASH#	SAMPLE#	UTS (KSI)	YTS (KSI)	ELONG%	HARDNESS	CONDUCT.	BEND
Z0021602C	0C01	1	51.2	49.0	16.9	RE 94	N/A	N/A
Z0021602C	0C01	2	50.9	48.6	16.3	RE 93	N/A	N/A
Z0021602C	0C01	3	50.7	48.6	16.9	RE 93	N/A	N/A
Z0021602C	0C01	4	50.1	47.4	15.8	RE 93	N/A	N/A
Z0021602C	0C01	5	51.1	48.9	16.6	RE 94	N/A	N/A
Z0021602C	0C01	6	51.6	49.3	16.4	RE 94	N/A	N/A
Z0021602C	0C01	7	51.2	48.9	17.3	RE 95	N/A	N/A
Z0021602C	0C02	1	49.7	47.2	17.4	RE 94	N/A	N/A
Z0021602C	0C02	2	49.6	47.0	16.6	RE 95	N/A	N/A
Z0021602C	0C02	3	50.1	47.9	15.7	RE 94	N/A	N/A
Z0021602C	0C02	4	50.3	47.9	16.9	RE 94	N/A	N/A
Z0021602C	0C02	5	49.5	47.9	16.9	RE 93	N/A	N/A

Chemical Composition (wt%), Aluminum Remainder

LIMITS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Bi	Zr	Ea	Tot
Maximum	0.80	0.70	0.40	0.15	1.20	0.35	0.25	0.15	NA	NA	NA	0.05	0.15
Minimum	0.40	0.00	0.15	0.00	0.80	0.04	0.00	0.00	NA	NA	NA	0.00	0.00
101538	.72	.32	.28	.09	.95	.09	.05	.03	.00	.00	.00	.01	.03

Applicable Requirements:

PER ASTM-B221-08, STENCILED ASME-SB221 1998 SECT II PER AMS-QQ-A-200/8 UNS# A96061
MEETS ALL SPECIFICATION REQUIREMENTS FOR 6061-T6511/T6 ELEVATED MINIMUM MECHANICAL
PROPERTIES AS FOLLOWS: UTS = 42.0 KSI MIN YIELD = 38.0 KSI MIN ELONGATION = 10.0% MIN

Miscellaneous Notes

MANUFACTURED IN USA MELTED IN USA

DAS
14
9-89

12/07/27

Plant Serial: 00043535

Kaiser Order Number: 620138

Line Item: 005

THYSSENKRUPP MATERIALS NA

DART AEROSPACE

ALUMINUM ROUND BAR 6061-T6511

1.00" DIA X 144.0000"

PART NO.

PO/Rel 17463

We certify that this is a true copy of the report furnished by the producer of the metal, or data resulting from tests made in approved labs.

Certificate of Mill Test Results

BL PEC-777693-010

23Jul12

Signed by: _____ Pg 2/2

KAISER
ALUMINUM
FABRICATED PRODUCTS

KAISER ALUMINUM
FABRICATED PRODUCTS, LLC
5205 KAISER DRIVE
KALAMAZOO, MI 49048

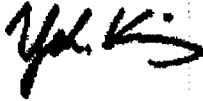
CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

CERTIFICATION

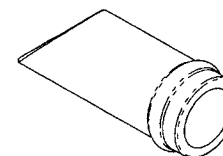
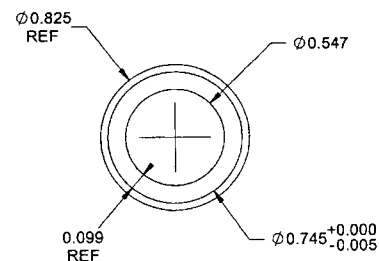
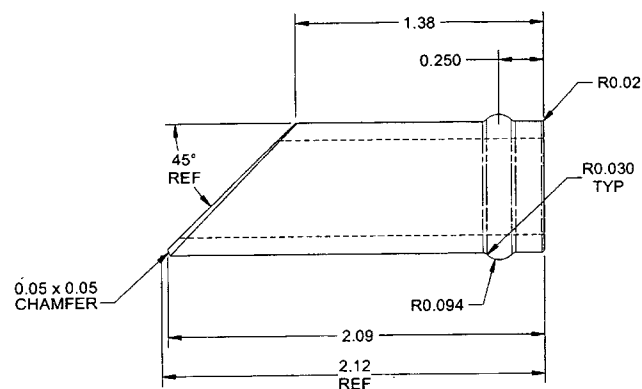
Kaiser Aluminum Fabricated Products, LLC hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms and conditions of sale. Test reports are on file, subject to examination.

Alex Yeh, Quality & Technology Manager



Plant Serial: 00043535
Kaiser Order Number: 620138
Line Item: 005

Page 2 of 2



D4653-7 LARGE FITTING

RELEASED
2012-11-05
JMD

NOTES:

- 1) MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM ROUND BAR
PER QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)
OR ASTM B211 OR ASTM B221
REF DART SPEC M6061T6R
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 0.04 lbs

DESIGN	<i>[Signature]</i>	DART AEROSPACE LTD	
DRAWN	<i>[Signature]</i>	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. A
MFG. APPR.	<i>[Signature]</i>	D4653	SHEET 4 OF 6
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	VENT MANIFOLD ASSY	NTS
DATE	12.07.25	<small>COPYRIGHT © 2012 BY DART AEROSPACE LTD THIS DOCUMENT IS PRELIMINARY AND CONFIDENTIAL. AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD</small>	